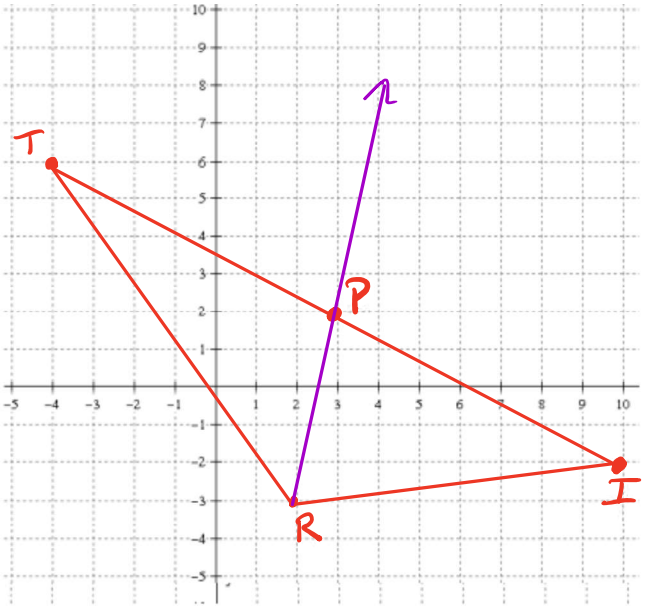
Angles Measures & Postulates

Hw 1.4 Part 2

THE ONE WITH THE CARTISIAN COORDINATE PLANE

a. Graph the points
   $T(-4,6)$
   $R(2,-3)$
   $I(10,-2)$



b. Connect the points in order to make a triangle, ΔTRI.

c. Name the obtuse angle. ∠R

d. Measure the obtuse angle. 120°

e. Find the coordinates of the midpoint of $\overline{TI}$.
   Plot on this point on the graph as point P

$M = \left(\frac{\Sigma x}{2}, \frac{\Sigma y}{2}\right) = \left(\frac{(-4)+(10)}{2}, \frac{(6)+(-2)}{2}\right) = \left(\frac{6}{2}, \frac{4}{2}\right)$
$= (3, 2)$

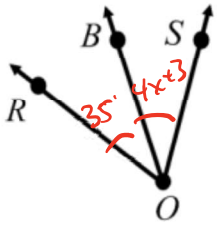
f. Draw $\overrightarrow{RP}$ are the graph.

g. If $\overrightarrow{RP}$ was the angle bisector of $\angle TRI$, what would have to be true! $\angle TRP \cong \angle PRI$

THE ONE WITH ANGLED PROOF

Given: $\overrightarrow{OB}$ is the angle bisector of $\angle ROS$
$m\angle ROB = 35$
$m\angle BOS = 4x + 3$

Prove: $x = 8$



Statements	Reasons
1. $\overrightarrow{OB}$ is the angle bisector of $\angle ROS$ $m\angle ROB = 35°$ $m\angle BOS = 4x + 3$	Given
2. $\angle ROB \cong \angle BOS$	Def'n of angle bisector
3. $m\angle ROB = m\angle BOS$	Definition of congruent angles
4. $35 = 4x + 3$	Substitution property of equality
5. $32 = 4x$	Subtraction property of equality
6. $8 = x$	Division property of equality
7. $x = 8$	Symmetric Property of Equality for Real numbers

Some possible reasons:

- Given
- Addition Property of Equality
- Subtraction Property of Equality
- Multiplication Property of Equality
- Division Property of Equality
- Substitution
- Distributive Property
- Combine like terms
- Definition of _____
- _____ Postulate
- _____ Theorem

Addition Postulates

THE ONE WITH CEDAR POINT IN THE WRONG CITY

3. Cedar Point is an amusement park in Cleveland, OH. Mr. Kelly's mom decides that when Mr. Kelly turns 35 he can drive to Cedar Point all by himself. His mom is worried about Mr. Kelly's directional skills and makes the following map to help him find his way. MapQuest calculates the miles from Rochester (point A) to Cleveland (point B) as 314 miles. Let's estimate this trip and say that it is a perfectly straight line segment from A to B.

a. 3 hours into his trip, Mr. Kelly stops for lunch in Eerie (point E) after averaging 54 mph. Find AE.

$AE = r \cdot t$
$= (54)(3)$
$AE = 162$ miles

b. Mr. Kelly decides to live on the edge and average 56 mph the remainder of the drive. How much longer will he be travelling finish the trip EB?

$AE + EB = AB$
$162 + EB = 314$
$EB = 152$

$EB = r \cdot t$
$152 = 56 \cdot t$
$2.714 = t$

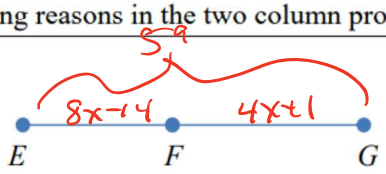
He will travel about 2.714 hours.

THE ONE WITH THE SEGMENTED PROOF

Label the picture and fill in the missing reasons in the two column proof.

Given: $EG = 59$
$EF = 8x - 14$
$FG = 4x + 1$

Prove: $x = 6$



STATEMENT	REASON
1. $EG = 59$ $EF = 8x - 14$ $FG = 4x + 1$	1. Given
2. $EF + FG = EG$	2. Segment Addition Postulate
3. $8x - 14 + 4x + 1 = 59$	3. Substitution property of equality
4. $12x - 13 = 59$	4. Combine Like terms
5. $12x = 72$	5. Addition
6. $x = 6$	6. Division

Some possible reasons:

- Given
- Addition Property of Equality
- Subtraction Property of Equality
- Multiplication Property of Equality
- Division Property of Equality
- Substitution
- Distributive Property
- Combine like terms
- Definition of _____
- _____ Postulate
- _____ Theorem